PERSONAL INFORMATION

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SUMMARY

An embedded R&D [SW] engineer with 8+ years of experience who has the capability of designing, implementing and testing best-formed embedded software blocks meeting the end-user's requirements. In addition, I have the capabilities of serving in leading positions where I mentor other team members and enhance the whole technical process.

EXPERIENCE

Jan 2022 - Current **Consultix Wireless - RF Equipment (testing and monitoring)**

Senior Embedded R&D [SW] Engineer | Oct 2023 - Current

I have been promoted to be a senior. I have gained some **additional** responsibilities like:
- Design and maintain the architecture for the embedded software of different products
- Design stream cipher encryption techniques
- Mentor less-experienced team members, develop their skills and deliver them needed knowledge

Embedded R&D [SW] Engineer | Jan 2022 - Sep 2023

- Design, implement, test and debug low and high level embedded software components (MCAL/ECUAL/Middleware/ Application) for RF testing devices
- Bug reporting, tracing and fixing
- Support embedded software QA
- Design and develop RF and serial communication software protocols
- Write code documentation and follow code style guidelines and naming rules of Consultix Wireless

Projects (selected but not limited to)

Neuron - DAS Monitoring System

- Write (Middleware/Application) components for DAS monitoring
- Migrate to different RF transceiver IC
- Write drivers to operate sensors for IoT purposes (MCAL/ECUAL)
- Make a configuration GUI interface for production purposes and end-users

WTX - CW Transmission Tester

- Refactor existing code base
- Write drivers for MCU peripherals (MCAL)
- Write drivers for on-board parts (ECUAL)
- Migrate to different MCU while expanding requirements

Technologies C, Python, PyQT, TI (CC13xx), Atmel (ATSAM, ATmega, ATtiny, ATxmega), Audio codec ICs, TI-RTOS, Linux, Code Composer Studio IDE, Microchip Studio IDE, Data Structures, LaTeX, Git, Sub-GHz

Jul 2021 - Dec 2021 **EOIP - Engineering Office for Integrated Projects - Medical Devices**

Embedded R&D [SW] Engineer

- Design, implement, test and debug low and high level embedded software components (MCAL/ECUAL/Middleware) for medical devices
- Bug reporting, tracing and fixing
- Write code documentation and follow code style guidelines and naming rules of EOIP

Projects (selected but not limited to)

Automated Bag Valve Mask

- Refactor existing code base
- Write drivers for MCU peripherals (MCAL)
- Write GUI component (Middleware)
- Write drivers for sensors (ECUAL)

Technologies C, TI (MSP430), DWIN DGUS, Code Composer Studio IDE, Data Structures, Git

Feb 2020 - Jun 2021 **BioBusiness - Medical Devices**

Embedded R&D [SW] Engineer

- Design, implement, test and debug low and high level embedded software components (ECUAL/Middleware) for medical devices
- Participate in system and customer requirement analyses
- Bug reporting, tracing and fixing
- Support embedded software QA
- Write code documentation and follow code style guidelines and naming rules of BioBusiness
- Use static analysis tools (PCLint Plus) and reviewing the results against MISRA-C rules

- **Projects** (selected but not limited to)

  - **BioVent A-series (NIV10) - Non-Invasive Ventilator**
    - Write drivers for sensors (ECUAL)
    - Write GUI component (Middleware)

  - **BioResp - Sleep Apnea Therapy Device**
    - Write GUI component (Middleware)
    - Participate in system and customer requirement analyses

- **Technologies** C/C++, STM32, TouchGFX, Keil uVision IDE, Data Structures, Git, SpiraTest, IEC 62304

Apr 2019 - Jan 2020 **Sigma Electronics - Power Electronics**

- **Embedded R&D [SW] Engineer**

  - Design, implement, test and debug low and high level embedded software components (MCAL/ECUAL/Middleware) for power electronic products
  - Bug tracing and fixing
  - Participate in product high and low level software design
  - Prepare product test sheets for the Quality Department
  - Write code documentation
  - Participate in system and customer requirement analyses

- **Projects** (selected but not limited to)

  - **Digital Home Stabilizer**
    - Write drivers for MCU peripherals (MCAL)
    - Write drivers for sensors and actuators (ECUAL)
    - Write measurement and switching components (Middleware)
    - Participate in system and customer requirement analyses

- **Technologies** C, PIC, PCC IDE, UML, Proteus Design Suite

Feb 2018 - Dec 2018 **STEBN - Bike Sharing Services**

- **Embedded R&D [SW] Engineer**

  - Design, implement, test and debug bike station high level system (GUI - Serial Communication - State Machine Development)
  - Bug tracing and fixing
  - Write code documentation

- **Projects**

  - **STEBN Bike Sharing System**
    - Write GUI component
    - Write database handling component
    - Write communication component (Serial Communication)
    - Participate in system state machine design

- **Technologies** Python, Bash, Linux OS, PyQT, Raspberry Pi, Git

TOOLS AND TECHNOLOGIES

- **Languages:** C/C++, Python
- **Development Tools:** Keil uVision IDE, Code Composer Studio IDE, Microchip Studio IDE, STM32CubeMX Software, TouchGFX, DWIN DGUS, Proteus Design Suite, Doxygen, Git, SpiraTest
- **Microcontrollers:** ARM Cortex-M Architecture, STM32, TI, Atmel, PIC
- **Design Patterns:** Adapter, Singleton, Command, Facade, State
- **Others:** Linux OS, Raspberry Pi, PyQT with Python, AUTOSAR DIO SWS, UML Class/Object Diagram, uC/OS II, TI-RTOS, DMA, Sub-GHz, Stream/Block cipher encryption, IEC 62304

EDUCATION

Sep 2012 - Aug 2017 **BSc | Computer Engineering and Automatic Control | Faculty of Engineering - Tanta University**

- Grade: Very Good
- Graduation Project Grade: Excellent

LANGUAGES

- **Arabic:** Native Language
- **English:** Professional